GIS

in the

City of Lewiston Maine

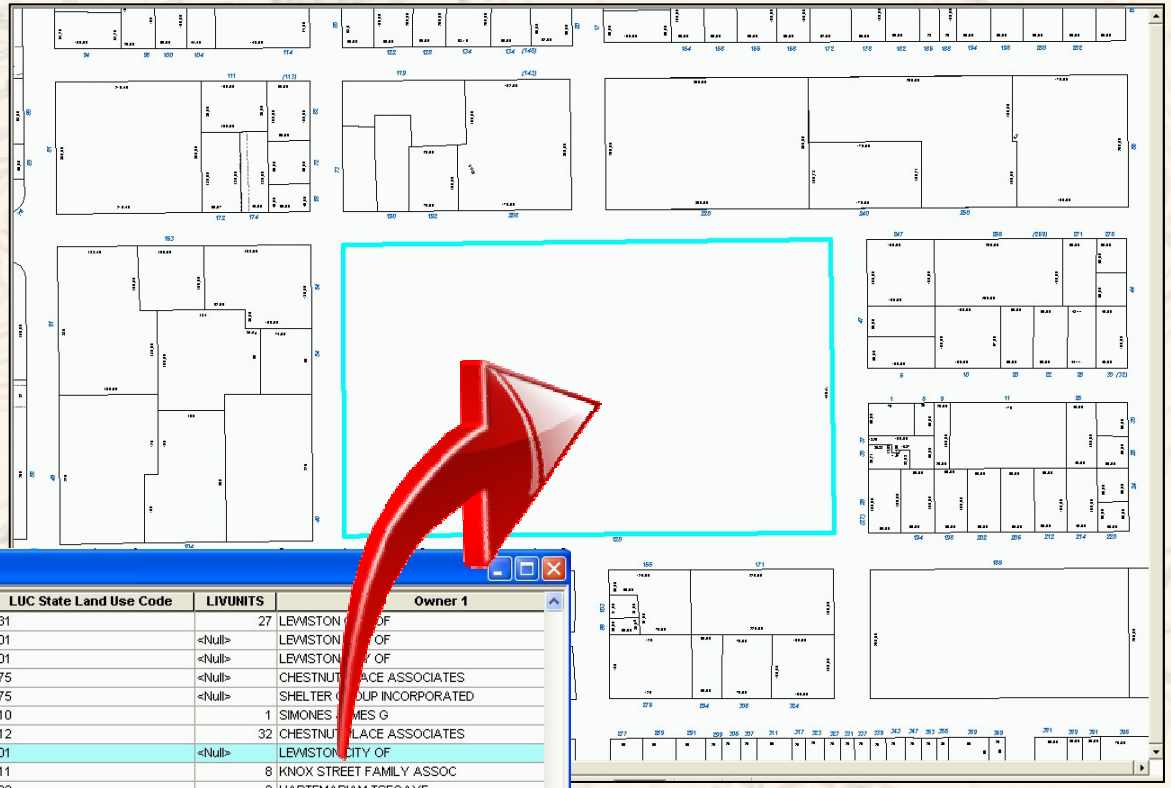
The purpose of this slideshow is to provide an overview of the city GIS and how it is used, maintained and accessed in-house as well as by the public.

Please simply hit your ‘down arrow’ or ‘page down’ key to view each slide

What is **GIS**?

Geographic **I**nformation **S**ystem!

- The GIS is a computerized map-based, or spatial database system which links mapped land features to data attributes.
- In a nutshell GIS ties important data about a particular feature on the face of the earth with a mapped & drawn point, line, or shape.



Attributes of Parcel Records

Parcel ID #	MAP	LOT	DATA_SRC	Deed Reference	LANDVAL	BLDGVAL	TOTALVAL	LUC State Land Use Code	LIVUNITS	Owner 1
RE00012347	196	28	4/1/2009	6374-1	30000	<Null>	30000	131	27	LEWISTON [illegible] OF
RE00013124	196	31	4/1/2009	4148-103	34500	10880	45380	901	<Null>	LEWISTON [illegible] OF
RE00002283	196	32	4/1/2009	1443-22	75000	2385900	2460900	901	<Null>	LEWISTON [illegible] OF
RE00002284	196	33	4/1/2009	1495-201	52670	6610	59280	375	<Null>	CHESTNUT [illegible] ACE ASSOCIATES
RE00007430	196	34	4/1/2009	WD 1560 -30	12180	840	13020	375	<Null>	SHELTER [illegible] OUP INCORPORATED
RE00009496	196	35	4/1/2009	WD 1677 -74	11160	42210	53370	310	1	SIMONES [illegible] MES G
RE00001951	196	36	4/1/2009	1491-102	68880	1198320	1267200	112	32	CHESTNUT [illegible] LACE ASSOCIATES
RE00006176	196	37	4/1/2009	36-108	458480	253350	711830	901	<Null>	LEWISTON [illegible] CITY OF
RE00000726	196	38	4/1/2009	-	17040	350720	367760	111	8	KNOX STREET FAMILY ASSOC
RE00013933	196	39	4/1/2009	RD 5192 -188	16320	67200	83520	102	2	HABTEMARIAM TSEGAYE
RE00000954	196	40	4/1/2009	5192-188	17040	408000	425040	111	7	C E I HOUSING INCORPORATED
RE00000945	196	41	4/1/2009	7679-250	17040	137580	154620	112	9	L J M LLC
RE00008498	196	42	4/1/2009	1442-177	19130	213230	232360	901	8	LEWISTON HOUSING AUTHORITY
RE00007781	196	43	4/1/2009	7636-186	17040	66660	83700	103	3	DUFOUR DENIS J

Record: 0 Show: All Selected Records (1 out of 12438 Selected) Options

GIS in Lewiston

A Few Facts:

- **The city began digital mapping using AutoCAD in ~1990, and began building a GIS in 1996-1997**
- **Lewiston has had GIS on-line mapping of some form since 2003, (public 2004)**
- **Lewiston is part of a collaborative GIS effort called AVGIS (Androscoggin Valley GIS), along with City of Auburn, AWSD, and AVCOG**
- **Parcels, zoning, street pavement, pump stations, parks and dozens of other essential data are mapped and managed with GIS.**
- **Our GIS serves an important role as the infrastructure inventory, modeling and management system for the drinking water, sewer, and storm utility districts.**
- **The GIS also serves an equally vital role as the backbone for the city EnerGov land management system.**

What are Some Uses of GIS?

- **Parcel mapping and revision management**
- **Tax map and other map atlas sets**
- **Street pavement, markings, pump stations, parks, pw mowing , plow and sand routes**
- **Abutter notification and other mailing lists**
- **Zoning studies and boundary definitions**
- **Demographic studies**
- **Inventory reporting required by mandates**
- **Map and define service and district boundaries**
- **Crime analysis and incident pin mapping**
- **Environmental constraints/buffering**
- **Energy saving studies (i.e. street lights)**
- **Routing, geocoding**
- **Planning; environmental, spatial, and demographic factors**
- **Wetland and other mitigation studies**
- **Points of interest identification**
- **School district definition studies and layers**
- **Local E911 road updates**
- **“Paperless’ mapping, online maps, network and portable**
- **Recreational paths and routes**
- **Conceptual planning**
- **NPDES and other mitigation plans**
- **Infrastructure inventory and asset management for the drinking water, sewer, and storm utility districts layers**
- **Storm, Sewer, and or Water system modeling**
- **Stormwater management, watershed, and CSO management and reporting**
- **Attribute queries, spatial analysis, modeling of utility operations**
- **Transportation planning studies**
- **Document management & hyper linking to GIS features**
- **Maps**
- **Many others!**

Who Uses it?

- City
  - Engineering
  - Public Works Highway
  - Planning & Development
  - Utility Districts, i.e. Water, Sewer, Storm
  - Street Lights
  - Arborists
  - Assessing
  - City Clerks
  - Parks
  - Public Safety, Police, Fire
- Outside via web:
  - LA 911 Comm Dispatch Center
  - General Public, Surveyors, Engineering firms, Citizens, Title researchers, Real Estate People, Developers, etc.

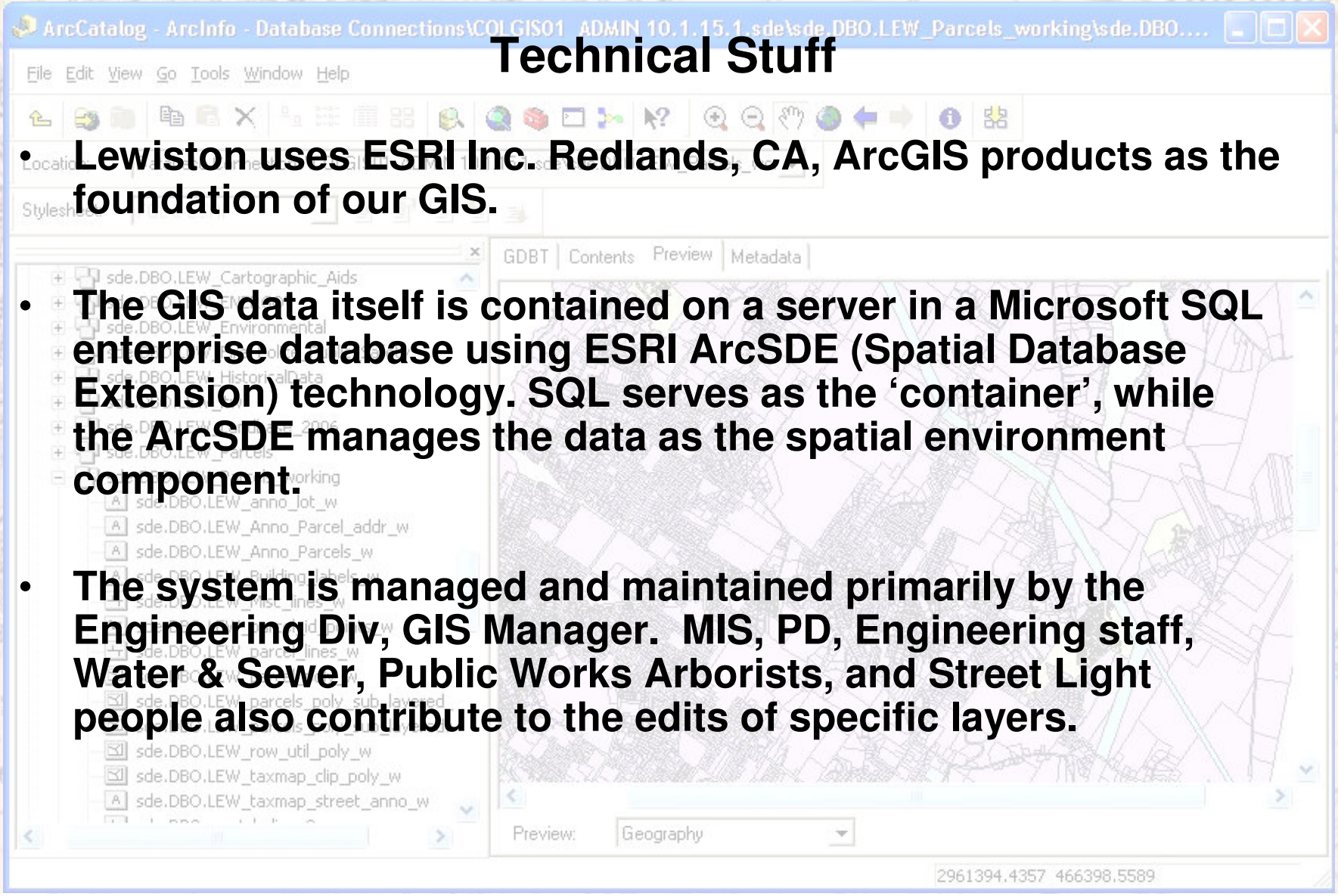
Where does the Data and Mapping Come From?

- High resolution aerial photography, planimetric mapping update projects Scanned and converted base maps
- GPS field data collection
- CAD drawing files
- Internal city databases (i.e. Assessing tax roll)
- AVCOG map data
- Maine Office of GIS http://megis.maine.gov/

How is it Maintained?

Technical Stuff

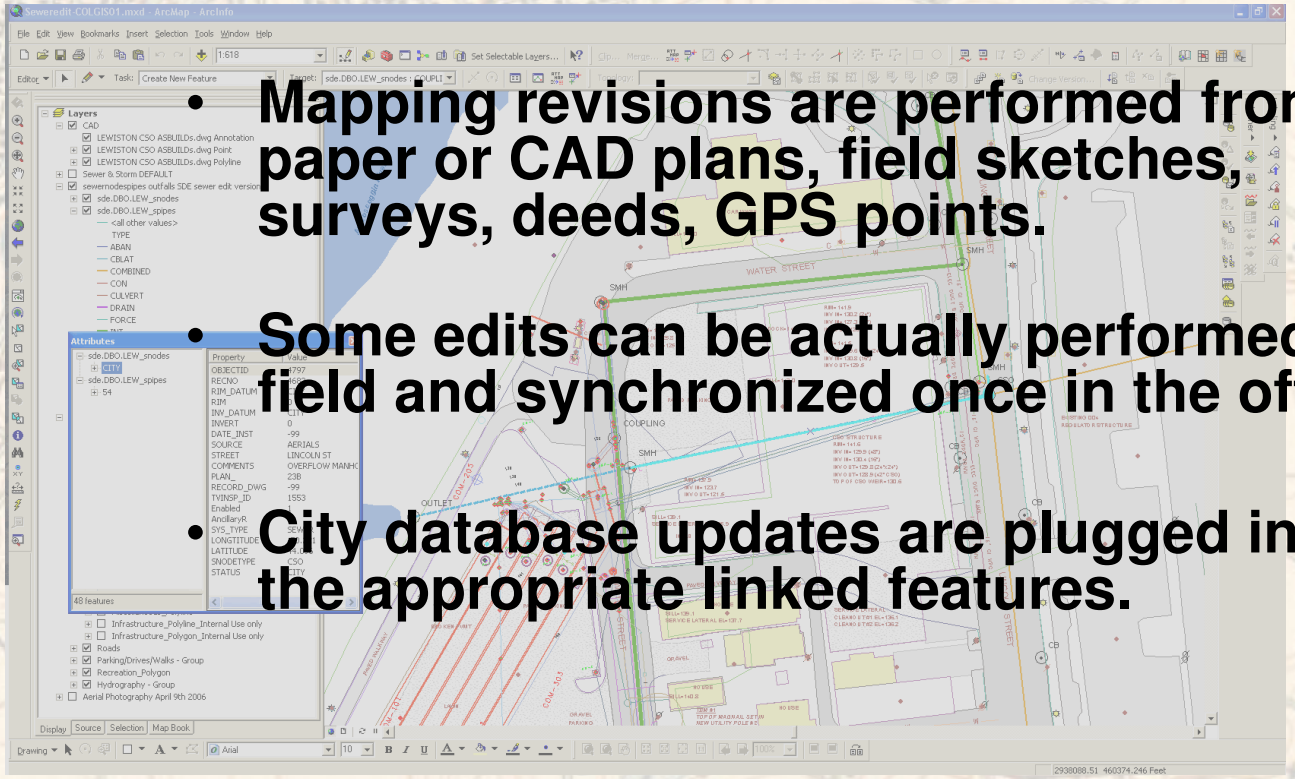
- **Lewiston uses ESRI Inc. Redlands, CA, ArcGIS products as the foundation of our GIS.**
- **The GIS data itself is contained on a server in a Microsoft SQL enterprise database using ESRI ArcSDE (Spatial Database Extension) technology. SQL serves as the 'container', while the ArcSDE manages the data as the spatial environment component.**
- **The system is managed and maintained primarily by the Engineering Div, GIS Manager. MIS, PD, Engineering staff, Water & Sewer, Public Works Arborists, and Street Light people also contribute to the edits of specific layers.**

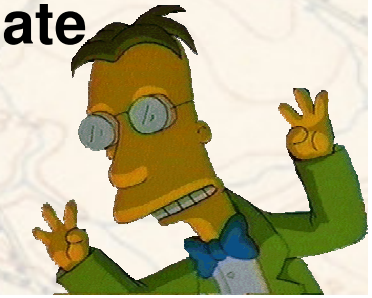


How is it Maintained?

More Technical Stuff

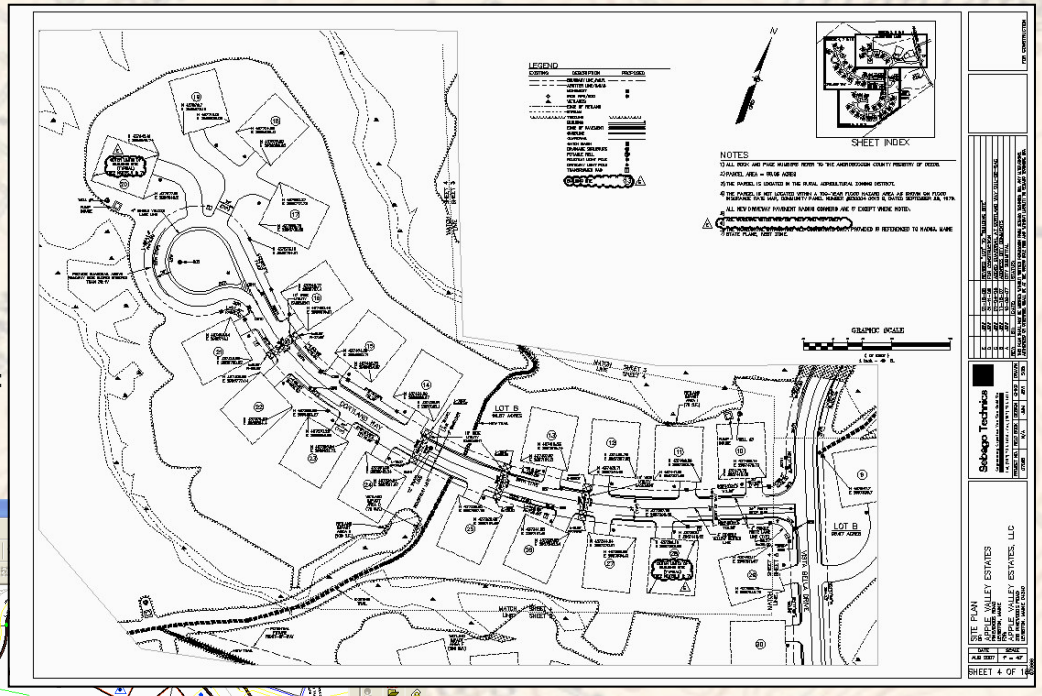
- **ESRI ArcGIS desktop software, AutoCAD, and a mapping grade GPS are some of the tools we use.**
- **Mapping revisions are performed from paper or CAD plans, field sketches, surveys, deeds, GPS points.**
- **Some edits can be actually performed live in the field and synchronized once in the office.**
- **City database updates are plugged in to update the appropriate linked features.**

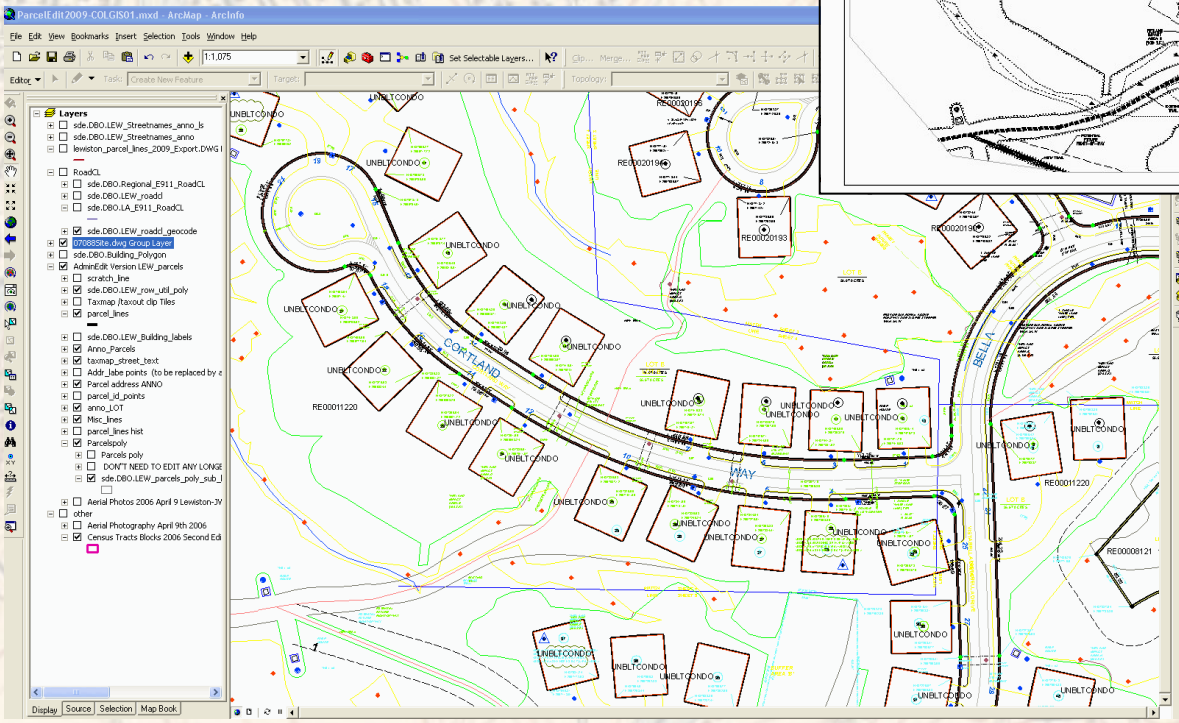




Example of Mapping Maintenance

Utilizing GIS desktop software ESRI ArcInfo with CAD plan data, CAD geometery is pulled into the appropriate GIS layer. This is the cleanest, fastest and most accurate means of getting geometry into GIS. CAD and GIS natively marry right up if the CAD data is properly formatted.



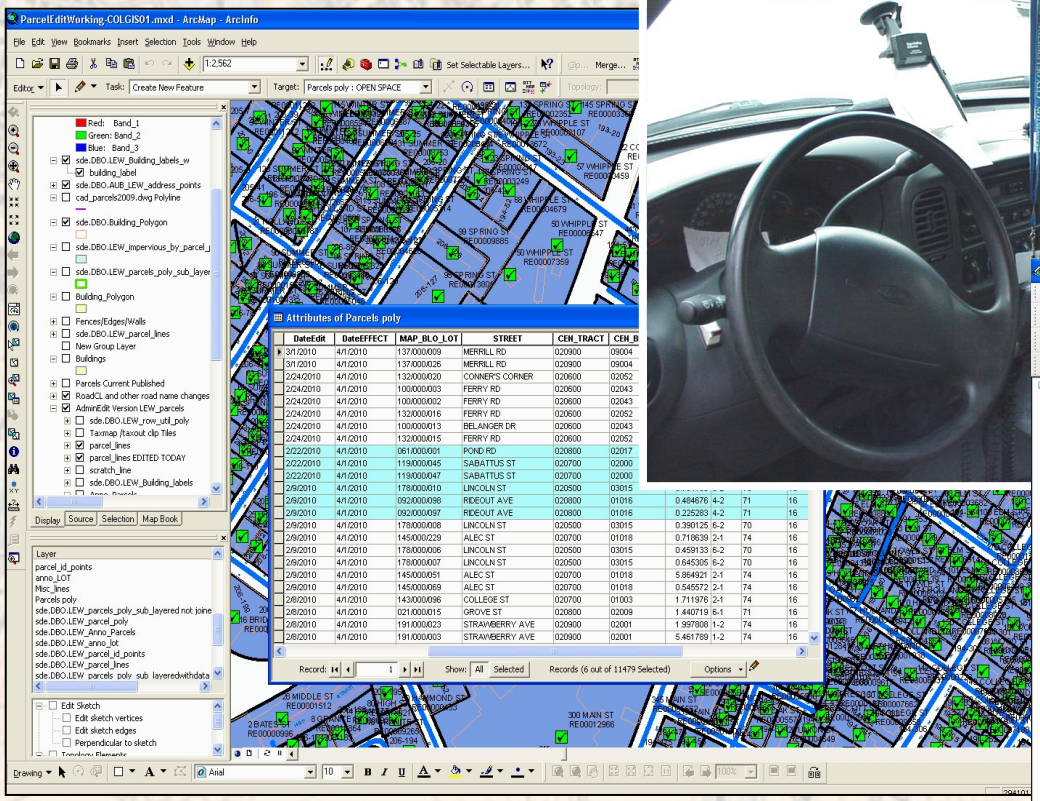


Digital CAD data for site, subdivisions, road plans, infrastructure/utilities, are important for creating efficient and accurate updates in the GIS.

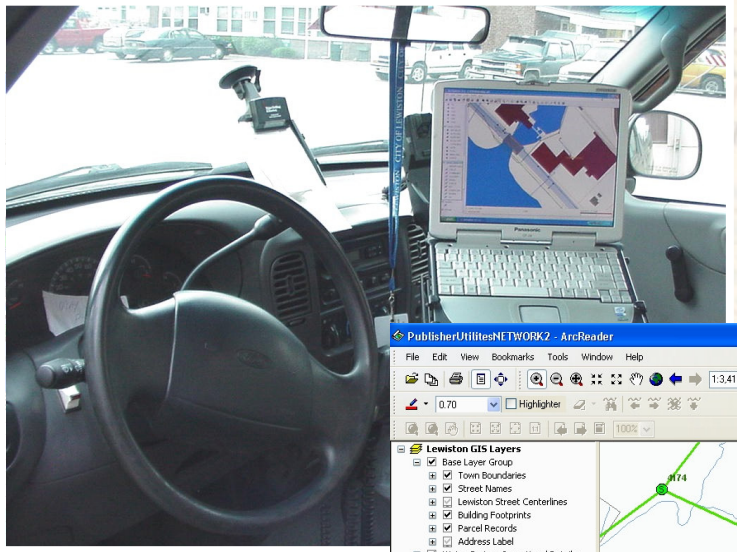
We request CAD data with all plan submissions.

How is GIS Interfaced?

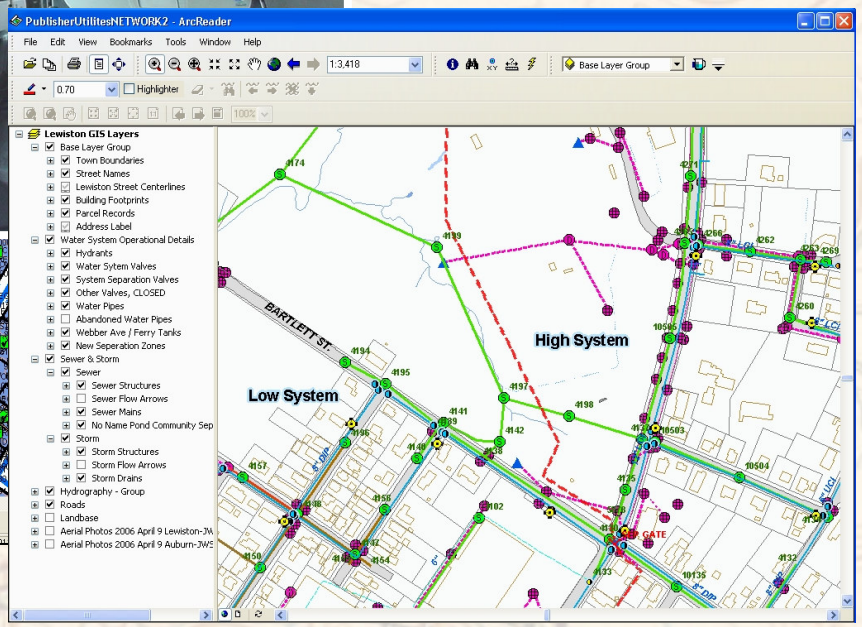
- ‘Power Users’ and Editors use desktop ArcGIS applications
- Laptops in field utilize portable GIS viewers to read a copy of the GIS in remote locations such as PW vehicles.
- Via the Web…



Office

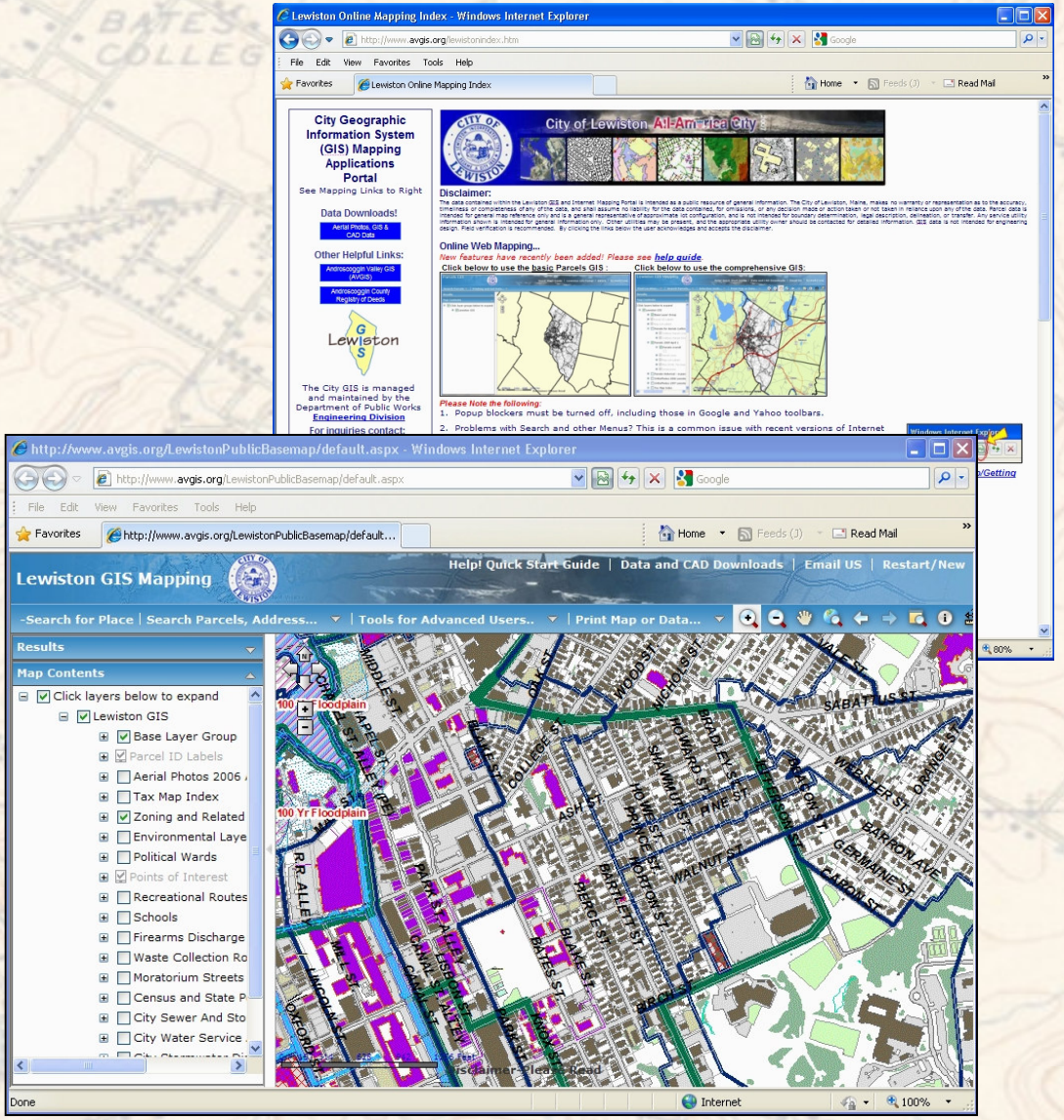


Field



How is it Accessed from Web?

- Web Apps:
  - Utilizing ESRI ArcGIS Server, specific apps (web pages) are created for both the internal city uses, as well as for the public.



I hope this helps provide a good overview and orientation to our City GIS. Please feel free to contact me for additional information.
Thank you!

Jim Ward

GIS Manager/Coordinator

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City of Lewiston

Department of Public Works

Engineering Division

www.lewistonmaine.gov